A national laboratory of the U.S. Department of Energy
Office of Energy Efficiency & Renewable Energy

NREL National Renewable Energy Laboratory

Innovation for Our Energy Future

Join us the second Thursday of every month for a series of "brown bag" seminars, sponsored by the National Renewable Energy Laboratory and the U.S. Department of Energy (DOE). Each seminar is held at NREL's Washington office with a videoconference link to Golden, Colorado. Topics focus on new and innovative renewable energy and energy analysis strategies, models, and technologies.

Emissions and Fuel Economy of Vehicles and Engines in the Real World and On the Road

An analytical seminar presented by DOE and NREL's Strategic Energy Analysis Center (SEAC)

Leo Breton, Mechanical Engineer
Environmental Protection Agency

Leo Breton

Thursday, September 14, 2006
Noon – 1 p.m. (in Washington, D.C. - bring your lunch)
10 – 11 a.m. (*videoconference* in Golden, Colo.)

Because of the current worldwide energy problems, it is important for energy analyses of the future to be based, as much as possible, on "real-world" test data. Laboratory testing is done over controlled, predefined cycles and under limited and known ambient conditions, which does not always reflect what occurs in the real world. All on-road vehicles also are now controlled by computers, which have the ability to self-monitor all those same parameters – and non-road vehicles and engines are following that same trend. Current analysis challenges the assumptions that were so easy to make when there was no real-world data available. Issues for discussion include:

- Computerized vehicles are good for emissions reductions and improvements to fuel economy, right?
- How does vehicle fuel consumption in the real world compare to the laboratory?
- Can we expect emissions and fuel economy to change proportionately with new standards?
- What can we learn from the past?

In this seminar, Leo Breton (of the Environmental Protection Agency) will share his insights and experiences of the past decade, and the light they shed on the issues above.

Leo Breton is responsible for initiating the worldwide shift in emphasis from simulated laboratory emissions and fuel economy testing of vehicles/engines to the more meaningful "in-use," on-road testing. As a mechanical engineer at the Environmental Protection Agency (EPA), Breton worked with exhaust-emissions compliance and fuel-economy measurements. During this time, he wondered whether then-current testing methods had any meaning outside of the laboratory. Breton's curiosity led him to invent and develop ROVER – an in-use measurement system that has become the seminal invention allowing large-scale, in-use testing worldwide – which has now been commercialized. Breton holds a bachelor's in physics from Clark University and a master's in mechanical engineering from the University of Maryland.

Golden, Colo., information

1617 Cole Blvd., Golden, Colorado
Building 15, Conference Room 375

Please contact Lynne Fenn at lynne_fenn@nrel.gov or 303-384-7439

Washington, D.C., information

901 D Street SW (also the Aerospace Building, 370 L'Enfant Promenade), adjacent to the Forrestal Building

Please contact Wanda Addison, of Midwest Research Institute (MRI), at wanda_addison@nrel.gov or 202-646-5278

If you are interested in participating in the seminar via conference call, please contact Wanda Addison, of MRI, at **wanda_addison@nrel.gov** or **202-646-5278** for instructions.

For more information on NREL analysis, please visit the Web site at
http://www.nrel.gov/analysis